

CLAIMS

WHAT IS CLAIMED IS:

1. A method of automatic measurement of audio presence and level by direct processing of a data stream representing an audio signal, comprising:

5 (a) extracting sub-band data from the data stream;
(b) dequantizing and denormalizing the extracted sub-band data;
(c) measuring an audio level for the dequantized and denormalized sub-band data without reconstructing the audio signal; and
(d) comparing the measured audio level against at least one threshold.

10

2. The method of claim 1, further comprising using a psychoacoustic model in determining a perceived level of the measured audio signal according to human ear sensitivity.

15

3. The method of claim 1, further comprising using channel characteristics in measuring the audio level of the sub-band data.

4. The method of claim 3, wherein the channel characteristics are used to weight an instantaneous level.

20

5. The method of claim 3, wherein the channel characteristics are used to weight an overall level.

25

6. The method of claim 1, wherein the sub-band data represents the audio signal's power in each frequency band represented by each sub-band at a particular point in time.

7. The method of claim 1, further comprising averaging the audio level over time.

30

8. The method of claim 1, further comprising thresholding the audio level.

9. The method of claim 1, further comprising triggering an alarm when the threshold is exceeded.

5

10. An apparatus for automatic measurement of audio presence and level by direct processing of a data stream representing an audio signal, comprising:

(a) means for extracting sub-band data from the data stream;

(b) means for dequantizing and denormalizing the extracted sub-band data;

10 (c) means for measuring an audio level for the dequantized and denormalized sub-band data without reconstructing the audio signal; and

(d) means for comparing the measured audio level against at least one threshold.

11. The apparatus of claim 10, further comprising means for using a psychoacoustic model in determining a perceived level of the measured audio signal according to human ear sensitivity.

15 12. The apparatus of claim 10, further comprising means for using channel characteristics in measuring the audio level of the sub-band data.

20

13. The apparatus of claim 12, wherein the channel characteristics are used to weight an instantaneous level.

25 14. The apparatus of claim 12, wherein the channel characteristics are used to weight an overall level.

15. The apparatus of claim 10, wherein the sub-band data represents the audio signal's power in each frequency band represented by each sub-band at a particular point in time.

30

16. The apparatus of claim 10, further comprising means for averaging the audio level over time.

17. The apparatus of claim 10, further comprising means for thresholding the 5 audio level.

18. The apparatus of claim 10, further comprising means for triggering an alarm when the threshold is exceeded.

10 19. An article of manufacture embodying logic for performing a method of automatic measurement of audio presence and level by direct processing of a data stream representing an audio signal, comprising:

- (a) extracting sub-band data from the data stream;
- (b) dequantizing and denormalizing the extracted sub-band data;
- 15 (c) measuring an audio level for the dequantized and denormalized sub-band data without reconstructing the audio signal; and
- (d) comparing the measured audio level against at least one threshold.

20 20. The article of claim 19, further comprising using a psychoacoustic model in determining a perceived level of the measured audio signal according to human ear sensitivity.

21. The article of claim 19, further comprising using channel characteristics in measuring the audio level of the sub-band data.

25 22. The article of claim 21, wherein the channel characteristics are used to weight an instantaneous level.

23. The article of claim 21, wherein the channel characteristics are used to weight 30 an overall level.

24. The article of claim 19, wherein the sub-band data represents the audio signal's power in each frequency band represented by each sub-band at a particular point in time.

5

25. The article of claim 19, further comprising averaging the audio level over time.

26. The article of claim 19, further comprising thresholding the audio level.

10

27. The article of claim 19, further comprising triggering an alarm when the threshold is exceeded.